

**Società meteorologica italiana.**

Atti del Congresso internazionale di meteorologia promosso dalla Società meteorologica italiana, Venezia, settembre 1920. Torino. 1921. 180 p. illus. 19 cm.

**Ständer, F.**

Eine kosmische Ursache zur Erklärung einer ungewöhnlichen Abweichung der Erdtemperatur vom Normalmittel. 7 p. diagr. 32 $\frac{1}{2}$  cm. (Sonderabdruck aus dem Deutschen met. Jahrbuch. Bayern. 1921.)

**U. S. Weather bureau.**

Radiographic weather code for vessel weather observers. Washington. 1921. 31 p. 30 cm.

**RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.**

C. F. TALMAN, Professor in Charge of Library.

The following titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

*Aérophile. Paris. 30 année. 1-15 janv., 1922.*

James, P. La direction des aéronefs sans aucune visibilité; les cable-guides de M. Loth. p. 18-21.

*American society of heating and ventilating engineers. Journal. N. Y. v. 28. March, 1922.*

Armsbach, O. W., & Ingels, Margaret. Temperature, humidity, and air motion effects in ventilation. p. 173-190.

*Annalen der Physik. Leipzig. Bd. 66. 10 Jan., 1922.*

Angerer, E. v., & Ladenburg, R. Experimentelle Beiträge zur Ausbreitung des Schalles in der freien Atmosphäre. p. 293-322.

*Annales de physique. Paris. t. 17. Jan.-fév., 1922.*

Boutaric, A. Recherches sur le rayonnement nocturne et le rayonnement solaire aux altitudes élevées. p. 54-87.

*Astrophysical journal. Chicago. v. 55. Jan., 1922.*

Ångström, Anders. Solar constant, sun spots, and solar activity. p. 24-29.

*Carnegie institution of Washington. Wash. Year book no. 20. 1921.*

Clements, F. E., & Douglass, A. E. Climatic cycles. p. 409. [Review and discussion in March REVIEW].

Clements, F. E., Lutjeharms, Dolly, & Fitzpatrick, T. J. Slope-exposure studies. p. 391.

Livingston, Burton E. Carbon-dioxide-supplying power of the air. p. 71-72.

Livingston, Burton E. Comparative rates of water evaporation from different kinds of surfaces. p. 72-74.

Shreve, Forrest. Method for measurement of evaporation from soils in place. p. 69-70.

Shreve, Forrest. Relation of slope exposure to soil temperature. p. 68-69.

*Ciel et terre. Bruxelles. 37 année. Nov.-déc., 1921.*

Poskin, P. L'air a-t-il une composition constante? p. 202-209.

*Cuba. Observatorio nacional. Boletín. Habana. v. 18. Encro 1922.*

Millás, José Carlos. El huracán de Tampa. p. 3-6.

Millás, José Carlos. Previsión del tiempo. p. 15-17.

*Ecology. Chicago. v. 3. Jan., 1922.*

Redway, Jacques W. City street dust and infectious diseases. p. 1-6.

*Engineering news-record. N. Y. v. 88. March 16, 1922.*

Fleming, R. Wind pressures at high elevations and their application to radio towers. p. 438-442.

*France. Académie des sciences. Comptes rendus. Paris. t. 174. 13 février, 1922.*

Monnet, P. Sur le tremblement de terre italien du 7 septembre 1920. p. 475-477.

*Geographical teacher. London. v. 11. pt. 3 No. 61. 1921.*

Cundall, L. The use of pilot balloons in secondary schools. p. 189-193.

Jones, J. Teaching notes—British climate. p. 156-157.

Sparry, V. C. Weather records in the concrete. p. 149-150.

*Great Britain. Meteorological office. Monthly meteorological charts. East Indian seas. April, 1922.*

Hennessy, J. Cyclone in the Arabian Sea. November, 1920.

*International review of the science and practice of agriculture. Monthly bulletin of agricultural intelligence and plant diseases. Rome. v. 12. May, 1921.*

Korstian, C. F. Effect of late spring frost upon forest vegetation in the Wasatch Mountains of Utah, U. S. p. 523-524. [Abstract from Ecology.]

*London, Edinburgh, and Dublin philosophical magazine. v. 43. March, 1922.*

Dale, J. B. Analysis of microseismograms. p. 463-471.

*Meteorologia pratica. Montecassino. Anno 11°. Sett.-dic., 1921.*

Craveri, Michele. Sulla temperatura del suolo e delle acque sotterranee. p. 155-162.

Crestani, G. Lo studio dei temporali. p. 176-178.

Oddone, Emilio. Il processo meccanico nella distribuzione di alcune nubi e nello svolgersi di alcune precipitazioni. p. 149-154.

*Meteorological magazine. London. v. 57. February, 1922.*

Flight of thistledown. p. 19.

Lewis, L. F. Sudden fall in temperature: Ross-on-Wye, November 2d, 1921. p. 1-3.

Pick, W. H. Note on the meteorological conditions affecting scent. p. 16-17.

Rhythmic changes in air movement. p. 3-5.

*Meteorological society of Japan. Tokyo. v. 41. Feb., 1922.*

Nakamura, Saemonitaro. On the direction of the first movement of the earthquake. p. 1-10.

*Meteorologische Zeitschrift. Braunschweig. Bd. 39. Jan., 1922.*

Defant, A. Die meridionale Temperaturverteilung auf der Erde und der Massenaustausch zwischen Äquator und Pol. p. 8-14.

Elsner, G. v. Einfluss der Inhomogenität einer Beobachtungsreihe der Lufttemperatur auf die auf eine längere Periode zurückgeföhrten Mittel einer kürzeren Reihe. p. 14-16.

Hellmann, G. Monsunartiger Windwechsel am Nordufer des Bodensees. p. 16.

Nölke, Fr. Über des paläoklimatische Problem. p. 1-3.

Schmauss, A. Die Temperaturwirkung von Niederschlägen. p. 17-18.

Schmauss, A. Ein trockener Raum über Wasser. p. 16-17.

Schoenrock, A. Einige Eigentümlichkeiten der Temperaturextreme der Luft im Europäischen Russland. p. 3-7.

Schubert, Über den Einfluss des Waldes auf den Abfluss im Gebirge. p. 18-19.

*Nature. London. v. 109. 1922.*

Bemmelen, W. van. The antitides. p. 172-173. (Feb. 9.) [Reprinted in this REVIEW, p. 90.]

Clark, J. Edmund. Flowering dates of trees along main British railway routes. p. 201-212. (Feb. 16.) [Discusses, *inter alia*, application of Hopkins's bioclimatic law to the British Isles.

Shaw, Napier. The antitides. p. 206. (Feb. 16) [Reprinted in this REVIEW, p. 92.]

Lockyer, William J. S. A rainbow peculiarity. p. 309. (March 9.)

*Nature. Paris. 50 année. 4 Mars., 1922.*

Mercanton, [Paul Louis]. À propos du microbarographe. p. 68.

*Naturwissenschaften. Berlin. 10. Jahrg. 20. Jan., 1922.*

Süring, R. Julius von Hann. p. 49-52. [Obituary.]

*Petermanns Mitteilungen. Gotha. 67. Jahrg. Dez., 1921.*

Hesse, Richard. Die Niederschlagsverhältnisse in Niederländisch-Indien zwischen 5° nördlicher und 5° südlicher Breite. p. 257-260. [With large-scale rainfall map of the Dutch East Indies.]

Wiedenhoff, S. Die halbtägige Luftdruckschwankung. p. 247.

*Physical society of London. Proceedings. London. v. 84. Feb. 15, 1922.*

Griffiths, Ezer. Bibliography [of hygrometry]. p. xciv-xcv.

Griffiths, Ezer. Some modified forms of hygrometers. p. viii-xlix.

Mayo, H. G., & Tyndall, A. M. The tilting hygrometer; a new form of absorption hygrometer. p. lxvii-lxxi.

Shaw, Napier. Measurement of atmospheric humidity. p. v-vii.

Skinner, S. Wet and dry bulb hygrometer. p. lx-lxiii.

Tyndall, A. M., & Chattock, A. P. Thermal hygrometer. p. lxxii-lxxx.

Watt, R. A. Watson. Note on psychrometry in a wind channel. p. lxiv-lxvi. [Abstract.]

Whipple, F. J. W. Rationale of Glaisher's system of hygrometry. p. lvi-lx.

Whipple, F. J. W. Theory of the hair hygrometer. p. l-lv.

*Pontificia accademia romana dei nuovi Lincei. Atti. Roma. Anno 73.*  
Sess. VI-VII. 16 maggio 1920-20 giugno 1920.

Negro, Carlo. Sulla velocità del vento all'inizio della stratosfera.  
p. 228-235.

*Revue générale des sciences. Paris. 33 année. 13 fév., 1922.*  
Maurain, Ch. La variation de la vitesse du vent avec l'altitude.  
p. 76-80.

*Royal Dublin society. Scientific proceedings. Dublin. v. 16. August, 1921.*

McClelland, J. A., & M'Henry, J. J. Uncharged nuclei produced  
in moist air by ultra-violet light and other sources. p. 282-303.

*Royal meteorological society. Quarterly journal. London. v. 47. Oct., 1921.*

Brooks, C. E. P. Meteorology of British North Borneo. p. 294-297.

Comissopoulos, N. A. Variability of mean annual temperature over  
North America and Europe during the ten years 1900-1909.  
p. 283-286.

Dines, W. H. Correlation between temperature, sky radiation,  
and vapour pressure. p. 260.

Dobson, G. M. B. Causes of errors in forecasting pressure gradients  
and wind. p. 261-269. [Abstract in Jan. 1922 REVIEW, p. 26.]

Douglas, C. K. M. A complex cyclone. p. 298-301.

*Royal meteorological society—Continued.*

Fujiwhara, S. The natural tendency towards symmetry of motion  
and its application as a principle in meteorology. p. 287-293.

Granger, R. Francis. Physical structure of cloud-form in the  
lower atmosphere. p. 271-281.

Salisbury, E. J. Phenology and habitat with special reference to  
the phenology of woodlands. p. 251-259.

*Royal society of Edinburgh. Proceedings. Edinburgh. v. 41. pt. 2.*  
sess. 1920-21.

Chisholm, Geo. G. John George Bartholomew. p. 170-176.

[Obituary.]

Knott, C. G. John Aitken. p. 177-181. [Obituary.]

Ramage, Alex G. Note on condition for mirage on the Queensberry  
road. p. 148-149.

*School science and mathematics. Chicago. v. 22. March, 1922.*

Packard, John C. Humidity indoors. p. 224-225.

*Science. N. Y. v. 55. 1922.*

Chase, Mabel A. Iridescent clouds. p. 263-264. (March 10.)

Meisinger, C. LeRoy. New discussion of temperatures in the  
United States. p. 292-295. (March 17.) [Abstract of Mo.  
WEATHER REV. article, Nov., 1921, pp. 595-606.]

*Scientific American. N. Y. v. 126. April, 1922.*

Bell, Charles H. Washing London fog out of the atmosphere of a  
motion picture studio. p. 255.

d'Orcy, Ladislas. Soaring birdmen. p. 235-237.

## SOLAR OBSERVATIONS.

### SOLAR AND SKY RADIATION MEASUREMENTS DURING FEBRUARY, 1922.

By HERBERT H. KIMBALL, Meteorologist.

For a description of instruments and exposures, and an account of the method of obtaining and reducing the measurements, the reader is referred to this REVIEW for April, 1920, 48:225.

From Table 1 it is seen that direct solar-radiation intensities averaged close to normal values for February at Washington, D. C., and Lincoln, Nebr., and slightly below normal at Madison, Wis. But few measurements were obtained at Santa Fe, N. Mex., on account of the frequency of local smoke in the atmosphere.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged close to the February normal at both Washington and Madison.

Skylight polarization measurements made on two days at Washington give a mean of 55 per cent, with a maximum of 57 per cent on the 24th. These are slightly below the average February Washington values. At Madison no measurements were obtained, as the ground was covered with snow during the entire month.

TABLE 1.—Solar radiation intensities during February, 1922.

[Gram-calories per minute per square centimeter of normal surface.]

Washington, D. C.

Date.	Sun's zenith distance.										Local mean solar time.
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th meri- dian time.	Air mass.					A. M.				
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
Feb. 3.....	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
4.....	2.16	0.80	0.94	1.12	1.29	1.34	1.20	1.05	0.93	2.16	
5.....	2.36	0.80	0.94	1.12	1.29	1.24	1.12	.92	.76	5.79	
6.....	5.16	.....	.....	.....	.....	1.20	1.12	1.04	1.02	2.02	
8.....	1.52	.....	.....	.....	.....	1.20	1.12	1.04	1.02	1.63	
11.....	5.36	.....	.....	.....	.....	1.20	1.12	1.04	1.02	6.02	
14.....	1.60	.....	.....	.....	.....	1.20	1.12	1.04	1.02	1.78	
16.....	1.45	.....	.....	.....	.....	1.20	1.12	1.04	1.02	1.45	
17.....	.86	1.15	1.29	1.43	1.60	1.24	1.14	1.04	1.02	.91	
22.....	8.49	.68	.80	1.04	1.26	1.18	1.08	1.00	1.02	10.59	
24.....	2.74	.94	1.07	1.26	1.43	1.18	1.08	1.00	1.02	2.49	
25.....	2.74	.64	.77	.87	.97	1.22	1.06	.87	.84	2.74	
Means.....	(.80)	.87	1.01	1.15	1.22	1.06	.87	.84	.84	(.84)	
Departures.....	+.02	+.03	±.00	-0.05	+.01	+.05	+.02	+.08	+.08	.....	

\* Extrapolated.

TABLE 1.—Solar radiation intensities during February, 1922—Con.

Madison, Wis.

Date.	Sun's zenith distance.										Local mean solar time.
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th meri- dian time.	Air mass.					A. M.				
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
Feb. 4.....	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
7.....	1.52	0.98	0.99	1.14	1.16	1.18	1.16	1.14	1.16	1.88	
9.....	3.30	.....	.....	.....	.....	.....	.....	.....	.....	3.81	
11.....	1.19	.....	.....	1.25	1.25	1.25	1.25	1.25	1.25	1.45	
13.....	.64	1.13	1.28	1.43	1.43	1.40	1.40	1.40	1.40	.86	
14.....	1.02	.....	.....	1.25	1.25	1.27	1.27	1.27	1.27	1.73	
15.....	.96	1.05	1.16	1.26	1.44	1.64	1.47	1.47	1.47	.96	
16.....	.54	1.05	1.16	1.26	1.44	1.64	1.47	1.47	1.47	.74	
24.....	1.12	1.03	1.22	1.35	1.56	1.56	1.56	1.56	1.56	1.68	
27.....	2.16	.....	.....	1.21	1.41	1.61	1.32	1.32	1.32	1.52	
28.....	.71	1.24	1.40	1.58	1.30	1.21	1.21	1.21	1.21	.96	
Means.....	(.97)	1.07	1.23	1.32	1.35	1.35	1.35	1.35	1.35	1.35	
Departures.....	+.04	-.06	-.01	-.05	-.03	-.03	-.03	-.03	-.03	-.03	

Lincoln, Nebr.

Date.	Sun's zenith distance.										Local mean solar time.
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th meri- dian time.	Air mass.					A. M.				
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
Feb. 1.....	2.36	1.04	1.18	1.40	1.62	1.45	1.22	1.11	1.01	1.96	
2.....	1.45	1.08	1.17	1.29	1.48	1.65	1.45	1.20	1.14	1.05	
3.....	1.52	.74	.74	1.13	1.31	1.31	1.31	1.14	1.05	1.96	
6.....	1.52	1.13	1.25	1.37	1.51	1.45	1.31	1.19	1.05	1.96	
7.....	1.37	.98	1.07	1.18	1.39	1.62	1.37	1.16	.98	1.75	
10.....	3.81	.91	1.08	1.39	1.62	1.37	1.16	1.08	1.08	1.68	
11.....	1.32	.77	.91	1.18	1.33	1.35	1.35	1.28	1.28	.86	
13.....	.79	.....	.....	.....	.....	.....	.....	.....	.....	1.45	
14.....	.91	.....	.....	.....	.....	.....	.....	1.30	.88	.62	
15.....	1.52	1.00	1.15	1.28	1.44	1.61	1.28	1.15	1.03	1.37	
16.....	1.37	1.00	1.12	1.28	1.42	1.56	1.28	1.15	1.03	1.36	
18.....	2.74	.93	1.08	1.28	1.42	1.56	1.28	1.15	1.03	5.79	
19.....	4.57	.91	1.03	1.19	1.38	1.39	1.18	1.03	.95	3.45	
Means.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Departures.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Santa Fe, N. Mex.

Date.	Sun's zenith distance.										Local mean solar time.
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th meri- dian time.	Air mass.					A. M.				
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.	
Feb. 13.....	1.96	.....	.....	1.24	1.46	1.72	1.24	1.11	1.01	2.87	
14.....	3.00	.....	.....	1.21	1.39	1.39	1.21	1.11	1.01	1.96	
20.....	2.62	.....	.....	1.21	1.39	1.39	1.21	1.11	1.01	2.16	
Means.....	.....	.....	.....	(1.22)	(1.42)	1.39	1.21	1.11	1.01	(1.30)	
Departures.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

\* Extrapolated.